



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/043,924	10/22/2001	Clark E. Lubbers	P01-3903	9364

22879 7590 01/18/2006

HEWLETT PACKARD COMPANY  
P O BOX 272400, 3404 E. HARMONY ROAD  
INTELLECTUAL PROPERTY ADMINISTRATION  
FORT COLLINS, CO 80527-2400

EXAMINER

TANG, KAREN C

ART UNIT PAPER NUMBER

2151

DATE MAILED: 01/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/043,924	<b>Applicant(s)</b> LUBBERS ET AL.	
	<b>Examiner</b> Karen C. Tang	<b>Art Unit</b> 2151	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

- This action is responsive to the amendment and remarks file on 10/22/05
- Claims 1-18 are for further examination.

### ***Information Disclosure Statement***

The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered. Please enter the co-pending application's serial number within the specification.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-18 are rejected under 35 U.S.C. 102(e) as being anticipated by

Lagueux et al (US 6,538,669) hereinafter Lagueux.

1. Referring to Claim 1, Lagueux discloses:

a virtualized logical disk object representing a virtual storage container (LUN, refer to Col 7), wherein the virtualized logical disk is an abstract representation of physical storage capacity provided by plurality of physical stores (refer to Col 8, Lines 25-35 and Col 17, and Fig 22, 23, and 26); and

a virtual disk object representing a virtual storage container (LUN), wherein the virtual disk object is an abstract representation of one or more virtualized logical disk object, the virtual disk object including an exposed management interface (refer to Col 2, Lines 5-58, and Col 7, Lines 5-30, also refer to Fig 22); and

wherein the virtual disk object is managed through the management interface to select (refer to Col 2, Lines 20-67) the one or more logical disk object represented by the virtual disk object (LUN).

2. Referring to Claim 2, Langueux discloses:

a derived disk object coupled to the logical disk object and including methods and data structures configured to add storage protocol to the logical disk object (refer to Col 2 and Col 3, and Col 7).

3. Referring to Claim 3, Langueux discloses:

a presented disk object coupled to the derived disk object and including methods and data structures configured to expose an virtual disk interface to selected clients (Col 15, Col 20 and Col 21).

4. Referring to Claim 4, Langueux discloses:

a network storage controller including a processor and memory, wherein the logical disk object and virtual disk object are implemented in memory of the network storage controller (Col 2, Col 3, Col 7 and 8).

5. Referring to Claim 5, Langueux discloses:

set of persistent objects managed by the network storage controller, wherein the persistent objects represent hardware resource of the network storage system (refer to Col 7).

6. Referring to Claim 6, Langueux discloses:

physical store object representing a physical storage device (refer to Col 8, Lines 15-51); and

a volume object representing storage capacity that can be allocated from the storage device represented by the physical store object, wherein the volume object presents a logical abstraction of the physical store object (refer to Col 7 and Col 8).

Art Unit: 2151

7. Referring to Claim 7, Languieux discloses:

a storage cell client object representing a host management agent, wherein the storage cell client object has an interface for coupling to the management interface (refer to Col 6, Lines 59-67 and Col 7).

8. Referring to Claim 8, Languieux discloses:

the storage cell client object is capable of represent a host management agent located in any network coupled computing device (Unix, Window, etc, refer to Col 5, support any kind of protocol, refer to Col 7, Lines 10-20).

9. Referring to Claim 9, Languieux discloses:

providing at least one network storage controller (ISAN server, refer to Col 6) coupled to a plurality of physical disk drives (Col 13) implementing physical storage capacity (refer to Col 17)

creating a physical store object representing each of the plurality of physical disk drives (refer to Col 8, Lines 25-35);

specifying at least some of the plurality of physical disk drives for inclusion in a storage cell (refer to Col 15, Lines 20-45, by choosing/specifying specific disks, 01, 02, and 04, for the mirror function, which, defines as for storage purpose.);

creating a storage cell object (storage device, refer to Col 8, and Col 9 and Fig 24, which demonstrate creating a storage cell object) representing the storage cell wherein the physical store objects corresponding to the specified physical disk drives are included in the created storage cell (array, refer to Col 9).

10. Referring to Claim 10, Languieux discloses:

obtaining user specifications of a required failure protection level (refer to Col 9, Lines 20-35, and Col 17, Lines 30-60, Col 20 and Col 21); and

obtaining user specifications of a set of physical disk drives (Col 2, Lines 20-45, Col 3).

11. Referring to Claim 11, Languieux discloses

creating a volume record (backup, refer to Col 8, Lines 25-67 and Col 9) on each of the physical disk drives includes in the created storage cell.

12. Referring to Claim 12, Languieux discloses

Art Unit: 2151

creating a management logical disk object storing metadata describing the created storage cell object (refer to Col 7, Lines 5-15, Col 8, Lines 25-67 and Col 9, Lines 1-30).

13. Referring to Claim 13, Langueux discloses

verifying that at least four physical store objects were specified before creating the storage cell object (refer to Col 16, Col 17, and Col 18).

14. Referring to Claim 14, Langueux discloses

verifying the sufficient physical store object were specified to satisfy the requested device failure protection level before creating the storage cell object (refer to Col 15, Col 16, and Col 20).

15. Referring to Claim 15, Langueux discloses:

verifying that ports of the network storage controller are operational before creating the store cell object (refer to Col 16).

16. Referring to Claim 16, Langueux discloses:

verifying that all of the selected physical store objects are in an operational condition before creating the storage cell object (refer to Col 16).

17. Referring to Claim 17, Langueux discloses:

connecting a host to a network storage controller (NSC) (server, 1250, refer to Col 21) via a host agent (storage director, refer to Col 21) capable of communicating command-response traffic with logical objects implemented in the network storage controller (refer to Col 21 and Col 22).

creating a logical disk object representing a virtual storage container, wherein the logical disk is an abstract representation of physical storage capacity provided by plurality of physical store (refer to Col 16, Lines 35-67, the storage is being created/implemented as an HDM, and is closely associated with LUN since the system is giving the device its identifier, and Col 17, and Fig 24 demonstrate the ability to create LUN);

adding a storage protocol to the logical disk object using a derived disk object in response to a user protocol selection (refer to Col 2 and 3);

associating the derived object with a host using a presented disk object referencing the host agent in response to a user host selection (refer to Col 21 and Col 22); and

Art Unit: 2151

creating a virtual disk object comprising the logical disk object, the derived disk object and the presented disk object (Table 1, Export table, and Table 2, refer to Col 17 and Col 18 ).

18. Referring to Claim 18, Langueux discloses

providing the user protocol selection and the user host selection via a management console having a computer interface and communicating the user selection to the host agent (Col 2 and Col 3);

### ***Response to Arguments***

Applicant's arguments filed 10/22/2005 are fully considered but found not persuasive.

Applicant argued that Cited Art Lagueux did not disclose or teach (i) "a virtualized logical disk object representing a virtual storage container, wherein the virtualized logical disk is an abstract representation of physical storage capacity provided by plurality of physical storages" (ii) a virtual disk object representing a virtual storage container, wherein the virtual disk object is an abstract representation of one or more virtualized logical disk objects, the virtual disk object including an exposed management interface (iii) creating a storage cell object representing the storage cell wherein the physical store objects corresponding to the specified physical drivers are included in the created storage cell" (iv) creating a logical disk object representing a virtual storage container, wherein the logical disk is an abstract representation of physical storage capacity provided by plurality of physical stores.

Examiner traversed the argument (i) Langueux taught LUN, where LUN is the virtual storage container, which represents the physical storage capacity provided by plurality of physical storages, see Fig 22. (ii) Langueux taught LUN wherein the LUN is the virtual storage container that inherently comprises interface: Note: Fig 15 and 16

Art Unit: 2151

demonstrates the server is able to communicate with the LUN/storage device. The LUN/storage device must inherently comprises the interface, because without the interface, LUN is unable to receive any management information from the server, however, since LUN is able to receive instructions from the server, thus, LUN comprises the interface, refer to Col 2, Lines 20-58, and Col 7, Lines 5-30. (iii) Fig 24 in Langueux that demonstrated the ability to create LUN. (iv) Langueux taught that LUN is the virtual storage container, which represents the physical storage capacity provided by plurality of physical storages, see Fig 22.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this Office action is set to expire **THREE MONTHS** from the mailing date of this action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karen C. Tang whose telephone number is (571)272-3116. The examiner can normally be reached on M-F 7 - 3.

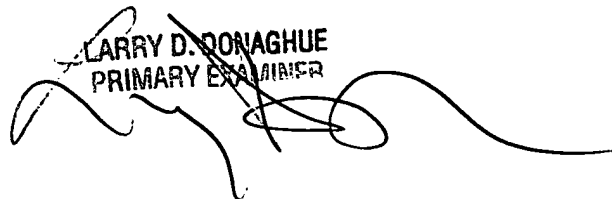
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zarni Maung can be reached on (571)272-3939. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



Art Unit: 2151

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Karen Tang

  
LARRY D. DONAGHUE  
PRIMARY EXAMINER